

CLAIMS

1. A process for the manufacture of a hydrogen storage material, the process
5 comprising comminuting a source of magnesium under a reducing atmosphere for a time
sufficient to produce particles of a required particle size and crystallite size, and
introducing at least one reducible PGM compound; wherein the at least one PGM
compound is substantially reduced during comminution, and distributed substantially at
the surface of the particles.
- 10 2. A process according to claim 1, wherein the reducing atmosphere comprises
hydrogen.
3. A process according to claim 1 or claim 2, wherein the source of magnēsium
15 comprises magnesium metal, magnesium hydride or an alloy or intermetallic compound,
or hydrided alloy or hydrided intermetallic compound of magnesium with one or more
other metals.
4. A process according to any preceding claim, wherein comminution is carried out
20 using a ball mill.
5. A process according to any preceding claim, wherein the at least one reducible
PGM compound is introduced towards the end of the comminution step.
- 25 6. A process according to any preceding claim, wherein the at least one reducible
PGM compound comprises an oxide, a hydrated oxide, a halide or other salt, or any
mixture thereof.
7. A process according to claim 6, wherein the at least one reducible PGM
30 compound comprises PdO, PdO.H₂O, palladium black, ruthenium black or RuO₂.

8. A process according to any preceding claim, wherein the particles have an average particle size of less than 100 μ m.

5 9. A process according to any preceding claim, wherein the particles have an average crystallite size of less than 100nm.

10. A hydrogen storage material prepared by a process according to any preceding claim.

REPLACED BY
ART 34 AMDT